SYNOPSIS OF CONRADINA (LABIATAE)

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The account of the small Southeastern genus *Conradina* in Small's *Manual of the Southeastern Flora* illustrates several of that author's shortcomings. Four species are keyed and named; an anomalous plant is briefly described in addition. Of the four named species, *C. puberula* Small is merely a form of *C. canescens*, in fact the same form that Gray considered typical of the latter; the types came from nearly the same locality. *C. montana*, described as new, had been named earlier in the same year as *C. verticillata* Jennison. Small knew almost nine months before publishing that the other name was already in press (letter from Jennison to Small, dated 10 March 1933, accompanied by galley proofs, filed as specimen, NY), but did not bother to correct his text. The anomalous plant he mentions is in fact a very distinct species, of which he saw only abnormal material. It was his regular custom to prepare his floras solely on the basis of what he had at New York, ignoring important collections at Cambridge, Washington, and St. Louis. Recently activity in building up herbarium collections in the Southern States underscores the limitations of the older centers. Of the two new species of *Conradina* described in this synopsis, New York has no material at all of one (of which the Gray Herbarium has only a sterile specimen), and no normal flowering material of the other (which is represented at New York and the Gray Herbarium only by duplicates of the same collection).

The genus *Conradina* comprises small shrubs with entire leaves which have dense, appressed or matted pubescence on the lower surface. In other woody Labiatae of the Southeast which without flowers might be mistaken for *Conradina*, the leaves are glabrous or have spreading hairs. The chief generic peculiarity is in the corolla tube, which is abruptly bent up above the middle, rather than straight or gradually curved. What benefit this may be to the plant is difficult to imagine. Add to this the peculiarity that each of the species occupies a geographic area entirely separate from all the others, one of them quite remote from the rest (*C. verticillata* on the Interior Low Plateau, the others on the outer Coastal Plain), and we have a rich subject for useless speculation that the phylogenists have so far overlooked.

In preparing this synopsis I have had the use of collections at Florida State University, the University of Florida, the Gray Herbarium, the New York Botanical Garden, the University of North Carolina, and Southern Methodist University. My thanks are extended to the various curators for their help.

CONRADINA Gray, Proc. Amer. Acad. 8: 294—295. 1870 (Dec. 31). *C. canescens* (T. & G.) Gray, the only original species, is automatically the type.

KEY TO THE SPECIES

1a. Calyx tube glabrous or very minutely and inconspicuously pubescent outside ..... 1. *C. glabra*

1b. Calyx tube densely short-pubescent or both pubescent and pilose outside

2a. Calyx tube densely short-pubescent and also pilose with moderately long (0.3—0.8 mm.) gland-tipped hairs (the teeth with longer hispid hairs); stem or main branches partly decumbent and rooting; plants of Kentucky and Tennessee, flowering May—early June ..... 2. *C. verticillata*

2b. Calyx tube densely short-pubescent, often also pilose with long (mostly 1—2 mm.) glandless hairs like those on the teeth, rarely also short-pilose with gland-tipped hairs less than half as long as the glandless ones; stems erect or short-decumbent, not freely rooting; plants of Florida and coastal Alabama, flowering all year

3a. Lower lip of corolla 4—9 mm. long; leaf blades with midrib moderately to very densely pubescent beneath, the inrolled margins usually concealing all or nearly all the surface of the blade; peduncles absent or very short, each axil with 1—6 flowers

4a. Larger leaves on well-developed flowering branches 7—20 mm. long, mostly equalling or exceeding the internodes; middle lobe of lower lip of corolla 3.2—5.5 mm. long; flowers 1—3 per axil; coastal Alabama and northwestern Florida 3. *C. canescens*

4b. Larger leaves on well-developed flowering branches 6.0—8.2 mm. long, mostly shorter than their internodes; middle lobe of lower lip of corolla 2—4 mm. long; flowers 1—6 per axil; interior peninsula Florida (Highlands Co.) ..... 4. *C. brevifolia*

3b. Lower lip of corolla 9—16 mm. long; leaf blades with midrib glabrous to moderately densely pubescent beneath, contrasting with the very densely pubescent surface of the blade (latter usually only partly concealed by the inrolled margin); peduncles evident, with 1—12 flowers each ..... 5. *C. grandiflora*

1. C. **glabra** Shinners, sp. nov. Frutex parva ramosa maxima parte glabra. Folia sessilia vel subsessilia subtus cana ramulorum juniorum lineari-oblanceolata 18—23 mm. long 1.6—3.0 mm. lata subacuta, ramulorum veterum minora sublinearia obtusa. Pedunculi brevissimi pubescentes 1—3-flori. Pedicelli pubescentes calycis longitudinem 1/3—2/3 attingentes. Calyx 6.2—7.0 mm. longus, tube glabra vel minutissime puberula, dentes ciliati, faux hispido-pilosa. Corolla extus pilosula 12—15 mm. longa. HOLOTYPE (with normal stamens): steep, sandy,

wooded bluff 1½ miles west of junction of Rt. 12 and road to Torreya State Park, Liberty Co., Florida, *F. H. Sargent 6219,* 29 April 1952 (SMU). PARATYPES (some with aborted anthers, as noted) (all from Florida): Gadsden or Liberty Co.: between Bristol and Greensboro, *E. West & H. H. Hume,* 28 March 1936 (FLAS, 2 sheets with normal anthers, 1 with aborted anthers, the filament tips enlarged, malformed). Liberty Co.: 10 miles southwest of Bristol, *E. J. Palmer 38556,* 11 April 1931 (GH, NY, two sheets each, all showing aborted anthers, the filament tips irregularly expanded and flattened). Common, along outer margin of bayhead, 7 miles south of Wilma, *A. A. Will,* 1 April 1961 (FLAS, anthers small or absent). Santa Rosa Co.: dry sand, edge of Swamp, Rt. 90, at roadside park, west of Milton, *S. C. Hood 1868,* 8 April 1949 (FLAS). County not known: one twig at bottom center of mixed sheet with fragmentary specimens of *C. canescens,* from Herb. John A. Lowell ("Transferred from the Boston Society of Natural History to the Gray Herbarium . . . Oct. 2, 1941"), data uncertain (there are several labels plus pencilled notes, but it could not be determined which are to be associated with this particular fragment) (GH).

Much branched shrub under 1 m. tall, largely glabrous. Leaves subsessile or sessile, closely canescent beneath, those of young shoots linear-oblanceolate, 18—23 mm. long, 1.6—3.0 mm. wide, subacute, with narrowly revolute margins; those on older growth almost linear, 7—14 mm. long, obtuse, with strongly revolute margins. Peduncles very short, minutely pubescent, 1—3 flowered. Pedicels about 1/3—2/3 as long as the calyx, minutely pubescent. Calyx 6.2—7.0 mm. long, resin-dotted, glabrous or very minutely and inconspicuously pubescent except for the hispid-pilose throat and margins of the teeth. Corolla pilosulous outside, 12—15 mm. long (as pressed), the lower lip 4—7 mm. long; color unknown but apparently very pale lavender or white.

This is the anomalous plant briefly noted by Small, but not named. Because the Palmer specimens (the only ones seen by Small) do not show normal anthers, they are not suitable for designation as holotype and isotypes.

2. C. VERTICILLATA Jennison, Journ. Elisha Mitchell Sci. Soc. 48: 268—269. 1933 (April). HOLOTYPE: on sandy beach, north bank of the Clearfolk River near Rugby, Fentress Co., Tennessee, *Jennison & Sharp 3-432,* 16 May 1931 (TENN., presumably destroyed in the 1934 fire; apparent isotype, lacking number but with other label data the same, GH). *C. montana* Small, Man. S.E. Fl. p. 1167. 1933 (after Nov. 30). HOLOTYPE: near Rugby, Tennessee (NY, not seen; sterile topotype, *Mrs. Ferriss (Herb. Albert Ruth),* July, 1903, NY). Corolla said to be lavender in the original description, pink on the only specimen seen bearing color data *(Braun s.n.,* cited below). The following collections have been examined.

KENTUCKY. McCreary Co.: river bank, South Fork Cumberland River, *E. Lucy Braun s.n.,* 18 June 1935 (GH). (Also sterile specimens,

same locality and collector, GH, NY.) TENNESSEE. Fentress Co.: Rugby, sandy soil, *Albert Ruth,* 27 June 1894 (sterile) (GH). About 1 mile north of Rugby, in sand on beach along north bank of Clear Fork River, *Jennison 33-124,* 28 May 1933 (NY; apparent duplicate but lacking number, GH). Sandy beach along Clear Fork River near Rugby, *Jennison 1111,* 5 May 1934 (NY, SMU). Morgan Co.: in sand banks of Clear Fork of Cumberland River, Rugby, *Jennison s.n.,* 4 June 1931 (GH). Sandy bars along stream and gravelly slopes, Rugby, *H. K. Svenson 4085,* 19 Aug. 1930 (sterile) (GH). Scott Co.: mouth of No Business Creek on South Fork River, rocky and sandy soil of Big Island, *A. J. Sharp, R. E. Shanks, E. Clebsch 3835,* 20 June 1947 (flowers past) (NY). Also CULTIVATED, TENNESSEE, Knox Co.: Sanford Arboretum, Knoxville, *A. F. Sanford,* 10 May 1935 (GH).

3. C. CANESCENS (T. & G.) Gray, Proc. Amer. Acad. 8: 295. 1870. *Calamintha canescens* T. & G. ex Bentham in DC., Prodr. 12: 229. 1848. "In Florida ad Tampa Bay (h. Gray!) ad Apalachicola (Drumm.!)." For reasons given below, the cited specimens have been disregarded and a lectotype designated in the Gray Herbarium, on a mixed sheet, at left, with blue label "Calamintha canescens Fla." on which has been added "T. & Gr." in Gray's hand-writing, and above which "A. W. Chapman" has been written on the sheet (at right is a smaller strip of paper with specimen from Herb. C. W. Short, pasted on the larger sheet). — *C. puberula* Small, Bull. Torr. Bot. Club 25: 469—470. 1898. "Florida: Apalachicola, old specimen, collector uncertain; later specimen, *A. H. Curtiss,* no. 2014. Also two specimens collected by Dr. Chapman." *(Curtiss 2014* and one Chapman specimen from NY examined.)

Corolla light lavender or lavender-blue, or white with colored lower lip; throat and lower lip with dark dots. In flower all year, but most freely in late winter (February). Common in sand along the coast from Mobile and Baldwin counties, Alabama, east to Franklin County, Florida; rarely slightly inland (in Okaloosa and Walton counties, Florida). There is a decidedly unscientific local legend that this is the true rosemary of Europe *(Rosmarinus officinalis),* brought to Florida by early British settlers and naturalized (clipping from St. Andrews Bay News, 8 April 1924, filled with specimen, NY; see also Hepburn, 1956, p. 7, under Panama City).

Neither this species nor *C. grandiflora* (which for long was not separated from it) occurs about or near Tampa Bay, and there is no material in the Gray Herbarium so designated. I suspect some mixup or error of labelling, and therefore consider the first collection cited by Bentham unsuitable for lectotype. It is uncertain whether Torrey and Gray (particularly Gray, who usually handled the Sympetalae) saw the Drummond material before naming the species. There is some indication that they did not until later. Several labels in the Gray Herbarium read "*Keithia* sp. Bentham," suggesting that Torrey and Gray had provided the specific epithet first, and that Bentham's acceptance of

it came later. Hence Bentham's second collection is passed over also. This creates no problem, fortunately, for *Drummond 23* (GH) belongs to the very same form and is from about the same locality as the designated lectotype. I have selected from the material at the Gray Herbarium the sample which from the nature of the label appears to be oldest, and which conforms to what Gray in his 1870 description indicated as the typical form, the one with calyx tube short-pubescent only ("calyce . . . dentibus (rarius tubo) pilis patentissimis hirsutis"). This is identical with what Small later described as the alleged species *C. puberula*. The two are merely genetic forms of one, and are not geographically segregated. My no. 29,264 from 10 miles south of Foley, Baldwin Co., Alabama, 7 April 1961 (SMU), has two branches from different plants, one showing calyx short-pubescent only, the other both short-pubescent and pilose.

4. C. **brevifolia** Shinners, sp. nov. C. canescenti persimilis, foliis brevioribus plerumque remotis cum fasciculis axillaribus quasi verticillatis; floribus ad 6 in quaque axilla, florum labio inferiore minus profunde diviso (loba media 2—4 mm. longa). HOLOTYPE: scrub, southwest of Avon Park, Highlands Co., Florida, *Ray Garrett 41*, 16 Feb. 1948 (FLAS, acc. no. 50231). PARATYPES (also Highlands Co.): Clay pit, Avon Park, *J. B. McFarlin 10135*, 6 Feb. 1935 (FLAS, acc. no. 49469). In very sandy soil along road 567 about 7 miles east of Avon Park, *Chas. C. Dean 64200*, 13 Feb. 1946 (NCU). — In additiont to these, a sterile specimen from the same county at first thought to be *C. grandiflora* doubtless is to be referred to *C. brevifolia* instead (the loan had been returned before I saw flowering material of the new species and the specimen has not been reexamined): in the scrub north of the Botanic Gardens, *McFarlin 10349*, 6 April 1936 (GH).

5. C. GRANDIFLORA Small, Bull. Torr. Bot. Club 51: 386—387. 1924. "The type specimens were collected by the writer on the ancient sand-dunes near Sebastian, Florida, April, 1921." (Topotype specimens collected by Small et al., Indian River Co., FLAS, GH, NY, NCU.)

Corolla color (noted on only a few specimens) lavender, pinkish, or pink-purple. Confined to eastern peninsula Florida, from Volusia County south to Dade County.

REFERENCES

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